US Department of ATTY DOCKET NO: SERIAL NO. Form PTO 1449 09/016,061 Commerce Patent P-IX 2965 and Trademark APPLICANT: Huse and Glaser Office MITTIFORMATION DISCLOSURE GROUP ART: FILING DATE: 1644 TEMENT BY APPLICANT January 30, 1998

## U.S. PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE

#### FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
		,				

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

M	Adams et al., "Increased Affinity Leads to Improved Selective Tumor Delivery of Single-Chain Fv Antibodies," <a href="Cancer Res.">Cancer Res.</a> , 58:485-490 (1998).
	Hawkins et al., "Selection of Phage Antibodies by Binding Affinity, Mimicking Affinity Maturation," <u>J. Mol. Biol.</u> , 226:889-896 (1992).
	Myszka et al., "Kinetic analysis of a protein antigen-antibody interaction limited by mass transportation on an optical biosensor," <u>Biophys. Chem.</u> , 64:127-137 (1997).
	Newman et al., ""Primatization" of Recombinant Antibodies for Immunotherapy of Human Diseases: A Macaque/Human Chimeric Antibody Against Human CD4," <u>Biotechnol.</u> , 10:1455-1460 (1992).
	Schier et al., "Isolation of Picomolar Affinity Anti-c-erbB-2 Single-chain fv by Molecular4 Evolution of the Complementarity Determining Regions in the Center of the Antibody Binding Site," J. Mol. Biol., 263:551-567 (1996).
M	Schier et al., "Isolation of High-Affinity Monomeric Human Anti-c-ervB-2 Single-chain Fv Using Affinity-driven Selection," <u>J. Mol. Biol.</u> , 2:55:28-43 (1996).

EXAMINER	Gamber	7/17/00	DATE CONSIDERED

Form PTO 1449 US Department of Commerce Patent and Trademark Office APPLICANT: Huse and Glaser

[Note: 1970] ATTY DOCKET NO: SERIAL NO. 09/016,061

APPLICANT: Huse and Glaser

[Note: 1970] ATTY DOCKET NO: SERIAL NO. 09/016,061

[Note: 1970] ATTY DOCKET NO: SERIAL NO. 09/016,061

January 30, 1998

TATEMENT BY APPLICANT

w	Schier and Marks, "Efficient in vitro affinity maturation of phage antibodies using BIAcore guided selections," <a href="Hum. Antibod. Hybridomas">Hum. Antibod. Hybridomas</a> , 7:97-105 (1996).
N	Thompson et al., "Affinity Maturation of a High-Affinity Human Monoclonal Antibody Against the Third Hypervariable Loop of Human Immunodeficiency Virus: Use of Phage Display to Improve Affinity and Broaden Strain Reactivity," J. Mol. Biol., 256:77-88 (1996)



1644

EXAMINER GAMBER TITIOO DATE CONSIDERED

Form PTO 1449		ATTY DOCKET NO: P-IX 2965	SERTAL NO. 09/016,061	
	and Trademark Office	APPLICANT: Huse and Glaser		
INFORMATION DI STATEMENT BY A	PPLICANTAUS 17 1999	FILING DATE: January 30, 1998	GROUP: 1643-	
	120			

	U.S. PATENT DOCUMENTS									
EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE			
10-		5,693,762	12/2/97	Queen et al.	530	387.3				
N		7 <b>53</b> 5, <b>573</b> ,230	5/19/98	Brooks et al.	424	158.1				

### FOREIGN PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
	-						

# OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

	RECEIVED
	AUG 1 9 PAID
	GROUP 1900
_	
_	

EXAMINER GAMBER 7/17/00	DATE CONSIDERED
-------------------------	-----------------

Form PTO 1449 US Department of ATTY DOCKET NO: SERIAL NO. Commerce Patent P-IX 2965 09/016,061 and Trademark APPLICANT: Office Huse and Glaser INFORMATION DISCLOSUR FILING DATE: **GROUP:** JUL 1 3 1998 STATEMENT BY APPLICANT January 30, 1998 1643

U.S. PATENT DOCUMENTS

JUL 1 5 1998

						000
EXAM. INITIALS	DOCUMEN NUMBER		NAME	CLASS	SUB- CLASS	FILING DATE
M	5,225,53	9 07/06/93	Winter, Gregory P.	530	387.3	
	5,264,56	3 11/23/93	Huse, William D.	536	25.3	
	5,523,38	8 06/04/96	Huse, William D.	536	22.1	
	5,585,08	9 12/17/96	Queen et al.	424	133.1	
	5,578,70	4 11/26/96	Kim et al.	530	388.22	

### FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
	0 451 216 B1	10/16/91	Europe	C12P21	08	
	0 682,040 A1	11/15/95	Europe JUL 15	160%K16	46	
			GROU	2 1800		·

# OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

	Brooks et al., "Integrin $\alpha V\beta 3$ Antagonists Promote Turmor Regression by Inducing Apoptosis of Angiogenic Blood Vessels" Cell 79:1157-1164 (1994)	
	Cheresh, D.A., "Human endothelial cells synthesize and express an Arg-Gly-Asp-directed adhesion receptor involved n attachment to fibrinogen and von Willebrand factor" <a href="Proc. Natl. Acad. Sci. USA 84:6471-6475">Proc. Natl. Acad. Sci. USA 84:6471-6475</a> (1987)	
M	Cheresh and Spiro, "Biosynthetic and Functional Properties of an Arg-Gly-Asp-directed Receptor Involved in Human Melanoma Cell Attachment to Vitronectin, Fibrinogen, and von Willebrand Factor" J. Biol. Chem. 262(36):17703-17711 (1987)	

EXAMINER GAMMER 7/17/00 DATE CONSIDERED

Form PTO 1449 US Department of Commerce Patent and Trademark Office

ATTY DOCKET NO: P-IX 2965

SERIAL NO. 09/016,061

APPLICANT:

Huse and Glaser

INFORMATION DISCLOSURE STATEMENT 1988 APPLICANT

FILING DATE:

GROUP:

January 30, 199 ECEN D 16414

'JUL 1 5 1998

GROUP 180

m	Choi et al., "Inhibition of neointimal hypersplasia by blocking αVβ3 integrin with a small peptide antagonist GpenGRGDSPCA" J. Vascular Surg., 19:125-134 (1994)	
	Chothia et al., "Canonical Structures for the Hypervariable Regions of Immunoglobulins" <u>J. Mol. Biol.</u> 196:901-917 (1987)	
	Clark, M. (ed.), "Protein Engineering of Antibody Molecules for Prophylactic and Therapeutic Applications in Man," Nottingham, England: Academic Titles (1993)	
	Day, E.D., <u>Advanced Immunochemistry</u> , Second Ed., Wiley-Liss, Inc., New York, NY (1990)	
	Devlin et al., "Random Peptide Libraries: A Source of Specific Protein Binding Molecules" <u>Science</u> 249:404-406, (1990) —	
	Foote and Milstein, "Kinetic maturation of an immune response" <u>Nature</u> 352:530-532 (1991)	
	Glaser et al., "Antibody Engineering by Condon-Based Mutagenesis in a Filamentous Phage Vector System" <u>J. Immunol.</u> 149:3903-3913 (1992)	
	Huse, W.D., "Combinatorial Antibody Expression Libraries in Filamentous Phage" In: Antibody Engineering: A Practical Guide, C.A.K. Borrebaeck, ed. W.H. Freeman and Co., Publishers, New York, pp. 103-120 (1991)	
	Huse et al., "Application of a Filamentous Phage pVIII Fusion Protein System Suitable for Efficient Production, Screening, and Mutagenesis of F(ab) Antibody Fragments" J. Immunol. 149:3914-3920 (1992)	
	Huston et al., "Antigen Recognition and Targeted Delivery by the Single-Chain Fv" Cell Biophysics, 22:189-224 (1993)	
	Kabat et al., U.S. Dept. of Health and Human Services, "Sequences of Proteins of Immunological Interest" Volume 1 (1991)	
m	MacCallum et al., "Antibody-antigen Interactions: Contact Analysis and Binding Site Topography" <u>J. Mol. Biol.</u> 262:732-745 (1996)	

1111 9 5 1000

EXAMINER

GAMBER 7/17/00

DATE CONSIDERED 1800

Form PTO 1449 US Department of ATTY DOCKET NO: SERIAL NO. 09/016,061 Commerce Patent and P-IX 2965 Trademark Office APPLICANT: Huse and Glaser FILING DATE: **GROUP:** INFORMATION DISCLOSURE STATEMENT BY January 30, 1998 APPLICANT 16434

JUL 1 3 1998 JUL 1 5 1998

	VEC. AND SOME SOME SOME SOME SOME SOME SOME SOME	
ro	Moore et al., "Directed evolution of para-nitrobenzyl esterase for aqueous-organic solvents" Nature Biotechnology 14:458-467 (1996)	
	Padlan, Eduardo A., "A Possible Procedure For Reducing the Immunogenicity of Antibody Variable Domains While Preserving Their Ligand-Binding Properties" Molecular Immunol. 28(4/5):489-498 (1991)	
	Plückthun and Skerra, "Expression of functional antibody Fv and Fab fragments in escherichia coli," Meth. Enzymol. 178:497-515 (1989)	
	Rosok et al., "A Combinatorial Library Strategy for the Rapid Humanization of Anticarcinoma BR96 Fab" <u>J. Biol. Chem.</u> 271:22611-22618 (1996)	
	Sandberg and Terwilliger, "Engineering multiple properties of a protein by combinatorial mutagenesis" <a href="Proc. Natl. Acad. Sci.">Proc. Natl. Acad. Sci.</a> 90:8367-8371 (1993)	
	Singer et al., "Optimal Humanization of 1B4, an Anti-CD18 Murine Monoclonal Antibody, is Achieved by Correct Choice of Human V-Region Framework Sequences" J. Immunol. 150(7):2844-2857 (1993)	
N	Yelton et al., "Affinity Maturation of the BR96 Anti-Carcinoma Antibody by Condon-Based Mutagenesis" J. Immunol, 155:1994-2004 (1995)	

JUL 1 5 1998 GROUP 1890

EXAMINER	Gamber	DATE CONSIDERED